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# Backup A Minute

By Kevin Savetz
September 30, 2003

Your business may be small, but the sheer amount of data that it generates probably isn't. E-mail, client files, scanned archives of paper documents — the volume of digital information a business needs to store seems to multiply faster than bacteria in a petri dish. How do you make all of that information available to the employees who need it, and keep it backed up?

Forty percent of SMBs don't back up their data at all, according to a Gartner survey, a situation that could prove disastrous to those businesses. "One of the things that is essential is to have a backup schedule and policy. Everything starts with policy," said Jennifer Perrier, Senior Research Analyst at Infotech Research Group. "You need to decide if you are going to back up everything or only some data. The more you back up, the more expensive it is going to be. Find out what is the most critical data — what data can we not afford to lose? That's where you make your storage and backup investment as a starting point." She suggests performing a full backup of that essential data once a week, plus nightly incremental backups.

Even when they know what data they need to back up, many businesses are stymied by the distributed nature of those files. As employees are becoming increasingly mobile, more business data is stored on laptops and PDAs, which are most vulnerable to loss but may rarely be backed up. "Take a good look at where the data is in the first place. Not all of it is going to be on desktop machines that are permanent installations," Perrier said.

One solution is to bring the data to a centralized server. "Companies need to encourage people to backup or store their data to a server rather than their local PC. Save it to a shared drive to be backed up nightly and stored off-site," she said. This frequently means a cultural change within the company, she said, which too often does occur until someone loses all of their data.

If your company doesn't have a server yet, it isn't alone. Less than one-third of businesses with fewer than 20 employees have a server, according to Gartner. Firms that do have found that servers don't need to be expensive behemoths: more than 90 percent of the servers deployed by small and midsize businesses are basic one- or two-processor machines. If used only for storage, a server doesn't need to be a PC at all: a Network Attached Storage device could fit the bill.

**Networked Storage Options**
Network Attached Storage (NAS) is a device that connects to an existing network (rather than connecting directly to a single PC.) A NAS device is actually a specialized server: a lightweight host dedicated to communicating between the storage media (usually a large hard drive) and other machines on the network.

Another common storage system is the Storage Area Network (SAN). A SAN is a collection of storage devices that to the applications using it, looks like one very large storage device. The data may be stored in disparate locations, but your applications don't know (and don't care) whether the data is stored locally or remotely.

"NAS options are probably going to be the fist step for companies getting into the network-based storage arena. There is less architecture and infrastructure planning involved," Perrier said.

"SANs have been more expensive propositions for most organizations, so for the past several years, they've been the domain of larger enterprises. However the prices are coming down into the mid-market. Unless you have massive data demands, SANs are probably still too expensive," she said. The technologies of NAS and SAN will eventually merge. "The line between those two technologies are going to be becoming a lot fuzzier," Perrier said.

**Direct-Attached Storage**
Despite the fact that centralizing data storage can ease data organization and backup, most small businesses haven't pondered network storage. Seventy percent of SMBs rely on direct-attached storage (storage that connects directly to a single PC or server) as their primary storage model, and 60 percent of them use it exclusively, according to Gartner.

In some cases, it makes more sense to connect a storage system to a single server. A mail server may well fall in this category. To implement a save-all-mail policy, a mail server could copy all mail to a SAN or NAS. A more efficient method could be to use direct-connected storage for staging of mail — there is no network traffic to check the queue for deferred mail or mail intended for a remote SMTP server.

Matt Shaw, system administrator at transponder manufacturer Mark IV, recommends backing up data to a hard drive, then moving the data to tape as needed. "It's a lot quicker to do that than to save directly to tape. We can have files restored within minutes, or a full server restore within a hour." Mark V uses an IBM Tivoli Storage Manager to automate the process. Shaw recommends defining a policy for retention of backup tapes. Mark IV stores backups for seven years.

*Kevin Savetz has been a freelance technology writer for a decade. Savetz's knowledge of small business technology has been published by The Washington Post, Computer Shopper, and The Rotarian. He also operates Free After Rebate, a Web log listing hardware and software freebies.*

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